



Benzonase Lyophilized Powder

Product Number: BE03

Description

Benzonase is a non-specific endonuclease derived from *Serratia marcescens* (also known as *Spirulinum*) that has been modified through protein engineering technology. It does not contain bacterial endotoxins expressed in prokaryotes. Functionally, it can cleave various forms of DNA and RNA, whether they are single stranded, double stranded, linear, circular, or super helical, and cut off phosphate diester bonds to produce 5' - phosphate nucleotides or 5' - phosphate oligonucleotides. Broad-spectrum nucleases have no specific requirements for nucleic acid base sequences and can cleave between any nucleotide in the chain, which can be used to remove nucleic acids from biological products. In the vaccine industry, protein and polysaccharide pharmaceutical industry, it is widely used to remove host nucleic acid residues, which can cause nucleic acid contamination of vaccines and protein products to reach the level of picograms (pg). Broad-spectrum nucleases can reduce the viscosity of cell lysate by degrading nucleic acids, which helps promote solution filtration/ultrafiltration in the purification process of cell derived particles such as viruses, AAV carriers, and inclusion bodies. This shortens processing time, improves the separation efficiency of precipitation and supernatant during centrifugation, and improves chromatographic purification efficiency, ultimately achieving the effect of increasing yield and effectively improving the purity of the final product. Biological analysis application: It can be used for ELISA sample preparation, chromatography, active biphasic electrophoresis (protein profiling), and Western blot analysis to improve resolution and sample recovery.

Level	Molecular biological grade, non sterile powder
Product Number	BE03
CAS Number	9025-65-4
E.C.	3.1.30.2
Source	<i>Serratia marcescens</i>
Specifications	100KU/piece
Molecular Weight	27.9 kD
Dilution Buffer	20mM Tris-HCl(pH 8.0), 2mM MgCl ₂ , 20mM NaCl
Storage Buffer	20mM Tris-HCl(pH 8.0); 2mM MgCl ₂ ; 20mM NaCl; 50% glycerol
Storage	It can be transported and stored at room temperature for a short period of time, and it is recommended to store it in a sealed manner with a storage temperature below 4°C.
Shelf life	Storage in a dry environment below 4°C after receipt is valid for 3 years
Advantages	Benzonase Lyophilized Powder is expressed and purified in the yeast eukaryotic system, thus avoiding endotoxin contamination of prokaryotic cells. Benzonase Lyophilized Powder It can maintain high stability and activity under various extreme industrial conditions, and reduce unit costs through large-scale production. It can perfectly replace expensive Benzonase and other similar products for research and production in the biopharmaceutical industry. The specific activity of Benzonase Lyophilized Powder is greater than 1000kU/mg protein, far exceeding the specific activity of other similar products in the market (up to 200%)

Quality Index

Appearance	White or almost white freeze-dried powder
Electrophoretic Purity	≥90% (SDS-PAGE)
Activity	≥20kU/mg Freeze-dried powder
Specific activity	≥1000kU/mg protein
Impurity Residue	Protease residue not detected



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Endotoxins	< 0.25EU/KU
Microbial Limit	≤5CFU/g
Unit definition	An enzyme activity unit is an oligonucleotide produced within 30minutes under reaction conditions of 37°C and pH 8.0, which is equivalent to a change of 1.0 in the absorption value at 260nm.
pH	6-10, optimal pH 8.0 for activity
Temperature	Maximum activity temperature 37°C, enzyme activity temperature range 0-42°C
Activator	1~10mM Mg ²⁺

The following commonly used reagents have inhibitory effects on the activity of broad-spectrum nucleases, and the loss of broad-spectrum nuclease activity is within 50% within the following concentration range.

Reagents	Concentration
Guanidine Hydrochloride	0-2M
Urea	0-2M
SDS	0-0.05%
KCl	0-0.2M
NaCl	0-0.15M
EDTA	0-1M
PO ₄ ³⁻	0-10mM
Ammonium Sulfate	0-100mM

Note

1. For your safety and health, please wear laboratory clothing and protective gloves when using.
2. The concentration of tramadol within 1.5% has no significant effect on broad-spectrum nuclease activity.
3. The activity of Benzonase Lyophilized Powder is influenced by factors such as ion concentration, reaction temperature, and pH, and it is recommended to explore the optimal concentration for initial use.